

New species of New Caledonian *Tristaniopsis* Brongn. & Gris (*Myrtaceae*) and comments on other species

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Summary : Seven new species of New Caledonian *Tristaniopsis* are described : *Tristaniopsis jaffrei* Dawson, *T. macphersonii* Dawson, *T. reticulata* Dawson, *T. lucida* Dawson, *T. minutiflora* Dawson, *T. yateensis* Dawson and *T. ninndoensis* Dawson. The following new combination is also made : *Tristaniopsis guillainii* var. *balansana* (Tison) Dawson. Notes on other New Caledonian species and a key to all New Caledonian species are also provided.

Résumé : Sept nouvelles espèces de *Tristaniopsis* néo-calédoniens sont décrites : *Tristaniopsis jaffrei* Dawson, *T. macphersonii* Dawson, *T. reticulata* Dawson, *T. lucida* Dawson, *T. minutiflora* Dawson, *T. yateensis* Dawson et *T. ninndoensis* Dawson. Une combinaison nouvelle, *Tristaniopsis guillainii* var. *balansana* (Tison) Dawson, est aussi établie. Des notes concernant les autres espèces néo-calédoniennes et une clé de toutes les espèces sont présentées.

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BROWN (1812) included three species in his genus *Tristania*. Recently WILSON & WATERHOUSE (1982) transferred two of these to two other genera leaving *T. neriifolia*, designated by SCHOTT (1830) as the type, as the sole species of *Tristania*. *Tristania laurina* was assigned to the reinstated *Tristaniopsis* Brongn. & Gris which was based on a New Caledonian species.

All of the New Caledonian species formerly referred to *Tristania* are now included in *Tristaniopsis*, a genus of about 44 species which ranges from Burma to east Australia and New Caledonia. The readily visible distinguishing features of *Tristaniopsis* are : alternate leaves ; lack of bud scales ; stamens in five fascicles¹ ; semi-superior to superior ovaries ; seeds with a wing developed from the raphe ; and a distinctive column, surmounted by the placentas, at the centre of the dehisced capsule (DAWSON, 1977).

Tristaniopsis calobuxus Brongn. & Gris.

Bull. Soc. Bot. Fr. 10 : 372 (1863), « *callobuxus* ».

- *Calobuxus* PANCHER ex BRONG. & GRIS, l.c. : 372 (1863), *pro syn.*, « *Callobuxus* ».
- *Tristania calobuxus* NIEDENZU in ENGL. & PRANTL, Nat. Pflanzenfam. 3 (7) : 89 (1893).

TYPE : *Pancher s.n.* (lecto-, P).

1. In *T. minutiflora* the stamens are sometimes single.

A common species throughout the southern ultrabasic region and on similar rocks along the east coast as far as Poindimié. Also on the ultrabasic massifs along the north west coast and on schists at the northern extremity of the main island. In shrub associations on rocky serpentine slopes and serpentine colluvium as well as on dry schist ridges in the far north. 10-1100 m.

The small, almost circular close-set leaves distinguish this species from all others in New Caledonia except *T. jaffrei*.

***Tristaniopsis jaffrei* Dawson, *sp. nov.* — Pl. 1.**

Frutex; foliis coriaceis, suborbicularibus vel obovatis, 11-14 × 8-11 mm, apicibus rotundatis; inflorescentiis ca. 1 cm longis, floribus 4-6; petalis ca. 2 mm latis; fasciculis staminum usque ad 6 mm longis, staminibus 20-26.

TYPE : *Jaffré 805* (holo-, P).

Shrub; young stems with dense, whitish spreading hairs gradually becoming glabrous and dark brown to black in colour.

Petioles ca. 1.5 mm long × 2 mm wide; lamina coriaceous, almost orbicular to obovate, 11-14 × 8-11 mm, with a dense pubescence of whitish spreading hairs when young, becoming glabrous when mature; tip rounded; base rounded to obtuse then narrowly attenuate; midrib slightly raised below, other veins obscure.

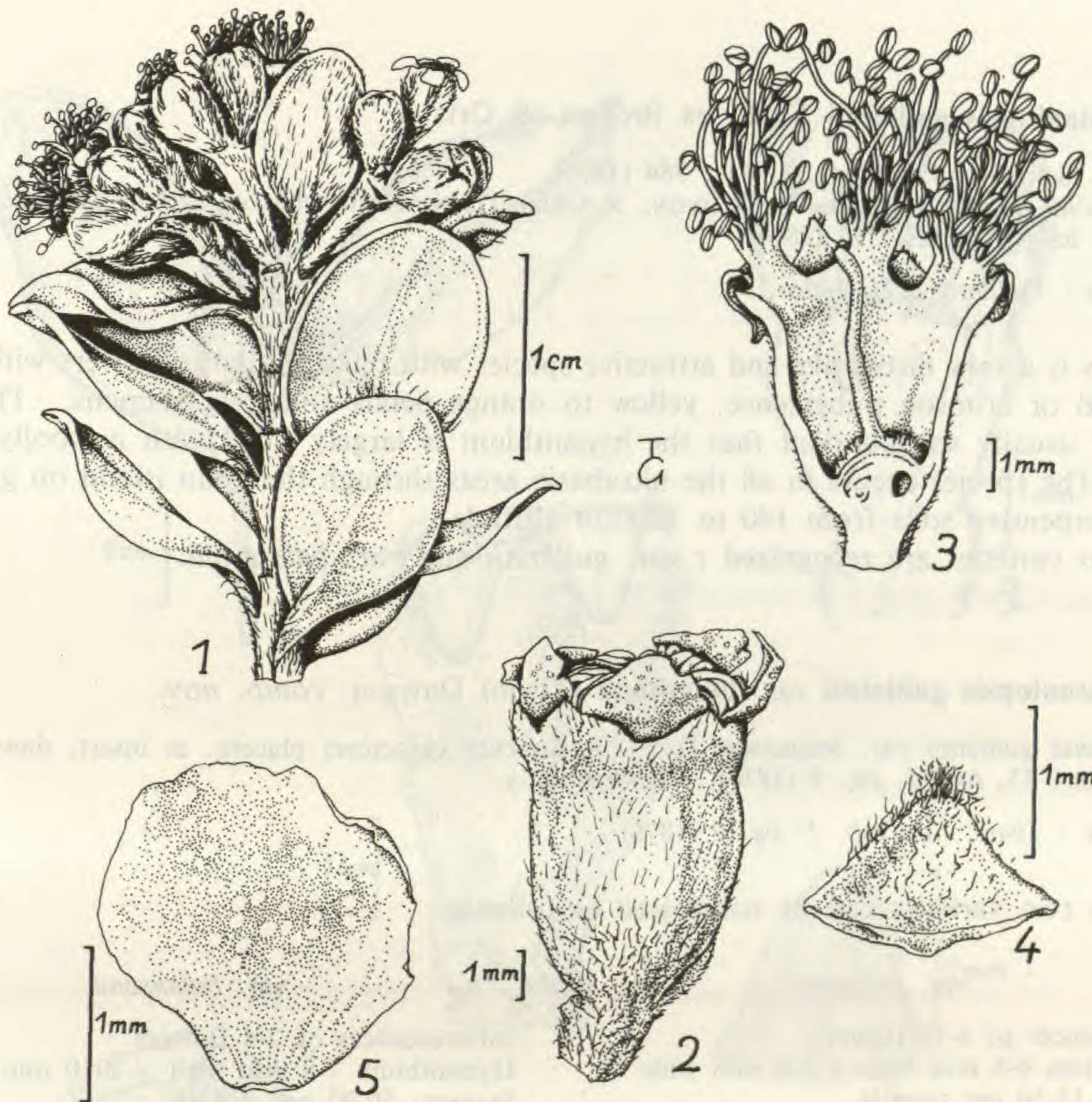
Inflorescences ca. 1 cm long of 4-6 flowers in the axils of leaves at the tips of ordinary branches; inflorescence axes with a close pubescence of short whitish hairs, exterior hypanthium and sepals with a rather sparse pubescence of long spreading whitish hairs, inner hypanthium, petals, stamens and style glabrous, ovary with a sparse to moderate pubescence of short erect hairs; peduncle ca. 4-5 × 2 mm; bracts and bracteoles linear to lanceolate, acute, 2-2.5 × 0.5-1 mm; pedicel ca. 0.5-1 × 1 mm; hypanthium reddish brown, 4-4.5 mm high and 3-4.5 mm wide; sepals erect, triangular, reddish brown, acute, ca. 1 mm high × 1.5 mm wide; petals yellow, ca. 2 × 2 mm; stamens yellow, in 5 bundles of 20-26 with the fused lower parts ca. 0.5-1 mm long × 1 mm wide; filaments 2-5.2 × 0.1 mm; anthers ca. 0.3 × 0.2 mm; ovary half inferior, ca. 1.5 mm high × 2.2 mm wide, 4-locular; style ca. 4.5 × 0.4 mm, not set in; placenta apical with 6-8 pendent ovules.

Fruit not known.

DISTRIBUTION AND ECOLOGY. — Only known from the type collection from Mt. Koniambo which is a peridotite massif near the north west coast. In shrub vegetation. Altitude 650 m.

OBSERVATIONS. — With its small, almost circular, close set leaves this species is vegetatively very similar to *T. calobuxus*. However, there are a number of differences in the flowers. *T. jaffrei* has more flowers per inflorescence; their pubescence is less strongly developed; there are 2-3 times as many stamens per fascicle with filaments about twice as long; the ovary is half inferior, not nearly superior, with a longer style and 4 locules. The latter feature is not known in other species in New Caledonia.

MATERIAL STUDIED : *Jaffré 805*, Mt. Koniambo, 650 m, fl., 1.6.1972 (P, WELTU).



Pl. 1. — *Tristaniopsis jaffrei* Dawson : 1, foliage and inflorescences ; 2, opening flower bud ; 3, flower, L.S. ; 4, sepal ; 5, petal. (All *Jaffré* 805).

***Tristaniopsis capitulata* Brongn. & Gris**

Bull. Soc. Bot. Fr. 10 : 372 (1863).

- *Tristania capitulata* PANCHER ex BRONGN. & GRIS, *l.c.* : 372 (1863), *pro syn.*
- *Tristania* « *capitellata* » LANESSAN, *Pl. util. Colon. françaises* : 258 (1886).
- *Tristania capitulata* (BRONGN. & GRIS) NIEDENZU in ENGL & PRANTL, *Nat. Pflanzenfam.* 3 (7) : 89 (1893).
- *Tristania undulata* PANCHER ex GUILLAUMIN, *Ann. Mus. Col. Marseille, sér. 2, 9* : 145 (1911), *nom. nud.*

TYPE : *Pancher s.n.* (holo-, P).

A shrub to small tree found in several localities in the southern ultrabasic massif and its eastern extension. 30-700 m altitude in shrubbery or low forest on rocky terrain. The almost sessile inflorescences and flowers and the general hairiness of the flowers are distinctive features of *T. capitulata*.

Tristaniopsis guillainii Vieill. ex Brongn. & Gris

Ann. Sci. Nat. Paris, sér. 5, 13 : 384 (1871).

— *Tristania guillainii* (VIEILL. ex BRONGN. & GRIS) TISON, Recherches caractères placent. et insert. dans les Myrtacées : 55 (1876).

TYPE : *Vieillard 2221* (holo-, P).

This is a very distinctive and attractive species with relatively large flowers with a dense rusty red or crimson pubescence, yellow to orange petals and long stamens. The pubescence is usually so abundant that the hypanthium is largely filled with a woolly mass of hairs. The species occurs in all the ultrabasic areas through the main island on gravelly to rocky serpentine soils from 140 to 1200 m altitude.

Two varieties are recognized : var. *guillainii* and var. *balansana*.

Tristaniopsis guillainii var. **balansana** (Tison) Dawson, *comb. nov.*

— *Tristania guillainii* var. *balansana* TISON, Recherches caractères placent. et insert. dans les Myrtacées : 55, *tab. 1, fig. 9* (1876), « *balanseana* ».

TYPE : *Tison, l.c., tab. 1, fig. 9* (1876).

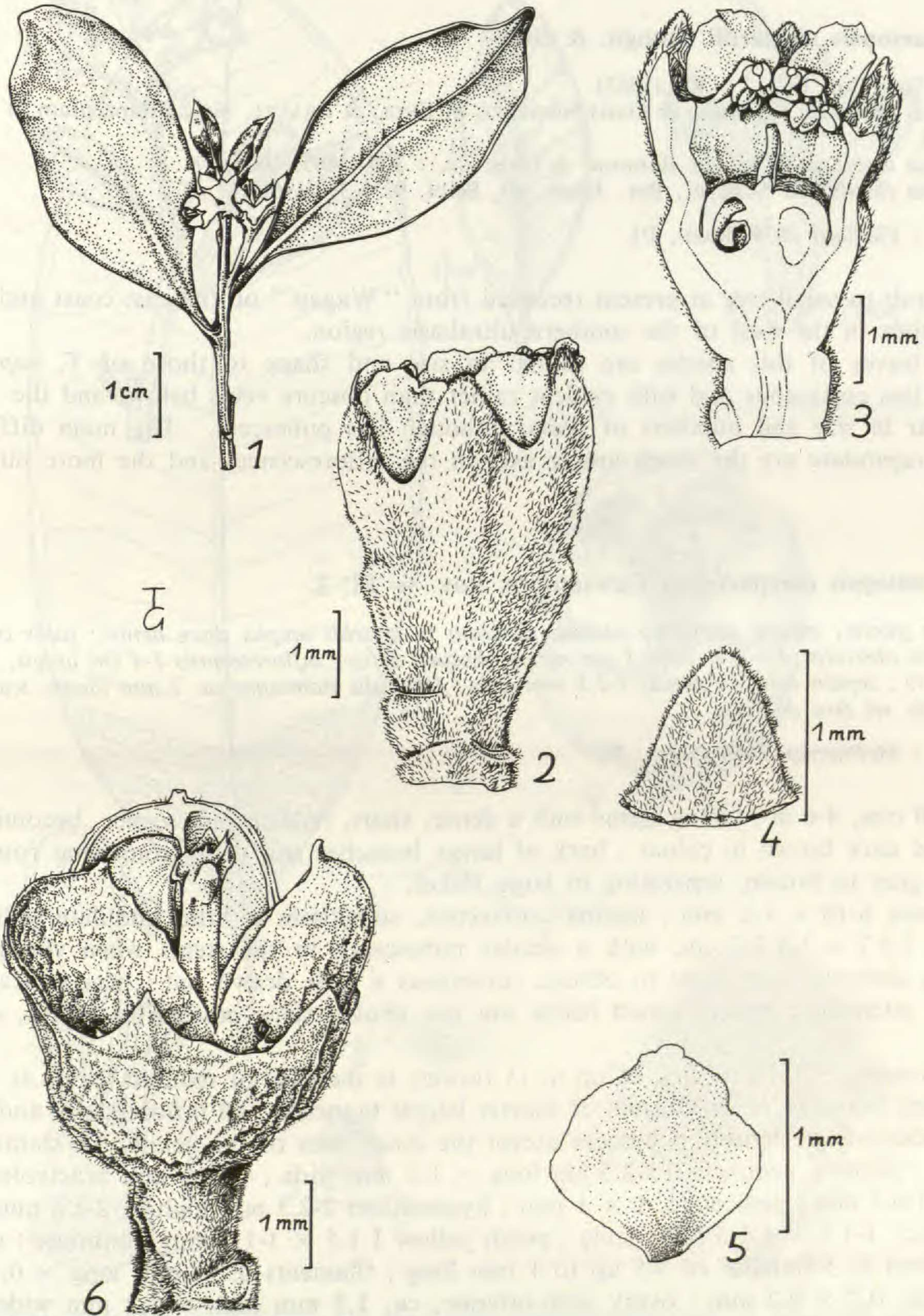
The two varieties can be contrasted as follows :

var. <i>guillainii</i>	var. <i>balansana</i>
Inflorescences of 4-10 flowers	Inflorescences of 2-4 flowers
Hypanthium 4-5 mm high × 5-6 mm wide	Hypanthium 7-8 mm high × 8-10 mm wide
Stamens 15-30 per fascicle	Stamens 50-70 per fascicle
Style glabrous or with moderately dense, whitish pubescence on lower 2/3 or at base	Style with dense, long, rusty red hairs on the lower 2/3

T. guillainii var. *balansana* is apparently restricted to the southern ultrabasic massif and var. *guillainii* to similar massifs north of a line from Bouloupari to Canala.

The two varieties seem reasonably distinct, although there are a few somewhat intermediate specimens. *MacKee 25647* from Dothio has the small and numerous flowers and few stamens of var. *guillainii*, but the style pubescence of var. *balansana*. *Veillon 770* from Haute Tamoia also agrees with var. *guillainii* in most respects except that the number of stamens per fascicle is about 40.

MacKee 23102 from the Dent de St. Vincent has the highest altitude recorded for the species at 1200 m. The leaves are unusually thick and the petioles very short and broad. The flowers also are larger than those of other specimens of var. *balansana*.



Pl. 2. — *Tristaniopsis macphersonii* Dawson : 1, foliage and infructescence ; 2, flower habit ; 3, flower, L.S. ; 4, sepal ; 5, petal ; 6, dehiscent fruit. (1, 6, *McPherson 5513* ; 2-5, *WELTU 14336*).

Tristaniopsis vieillardii Brongn. & Gris

Bull. Soc. Bot. Fr. 12 : 300 (1865).

- *Tristania vieillardii* (BRONGN. & GRIS) NIEDENZU in ENGL. & PRANTL, Nat. Pflanzenfam. 3 (7) : 89 (1893).
— *Tristania insularis* VIEILL. ex BRONGN. & GRIS, *l.c.* : 300 (1865), *pro syn.*
— *Tristania floribunda* SCHLTR., Bot. Jahrb. 40, Beibl. 92 : 31 (1908).

TYPE : *Vieillard 2079* (holo-, P).

A shrub to small tree at present recorded from "Wagap" on the east coast and Prony and Dumbéa in the west of the southern ultrabasic region.

The leaves of this species are similar in size and shape to those of *T. capitulata*, although less coriaceous and with evident rather than obscure veins below, and the flowers are similar in size and numbers of parts, although less pubescent. The main differences from *T. capitulata* are the much longer axes in the inflorescences and the more numerous flowers.

Tristaniopsis macphersonii Dawson, *sp. nov.* — Pl. 2.

Arbor parva ; cortice aliquanto scabra, fissurato in lamellis amplis disce dente ; foliis coriaceis, ellipticis vel obovatis, 3.5-7 × 1.8-8.3 cm nervis obscuris infra ; inflorescentiis 1-4 cm longis, floribus usque ad 15 ; sepalis erectis ; petalis 1-1.5 mm latis ; fasciculis staminum ca. 1 mm longis, staminibus 3-5 discretis vel fere discretis.

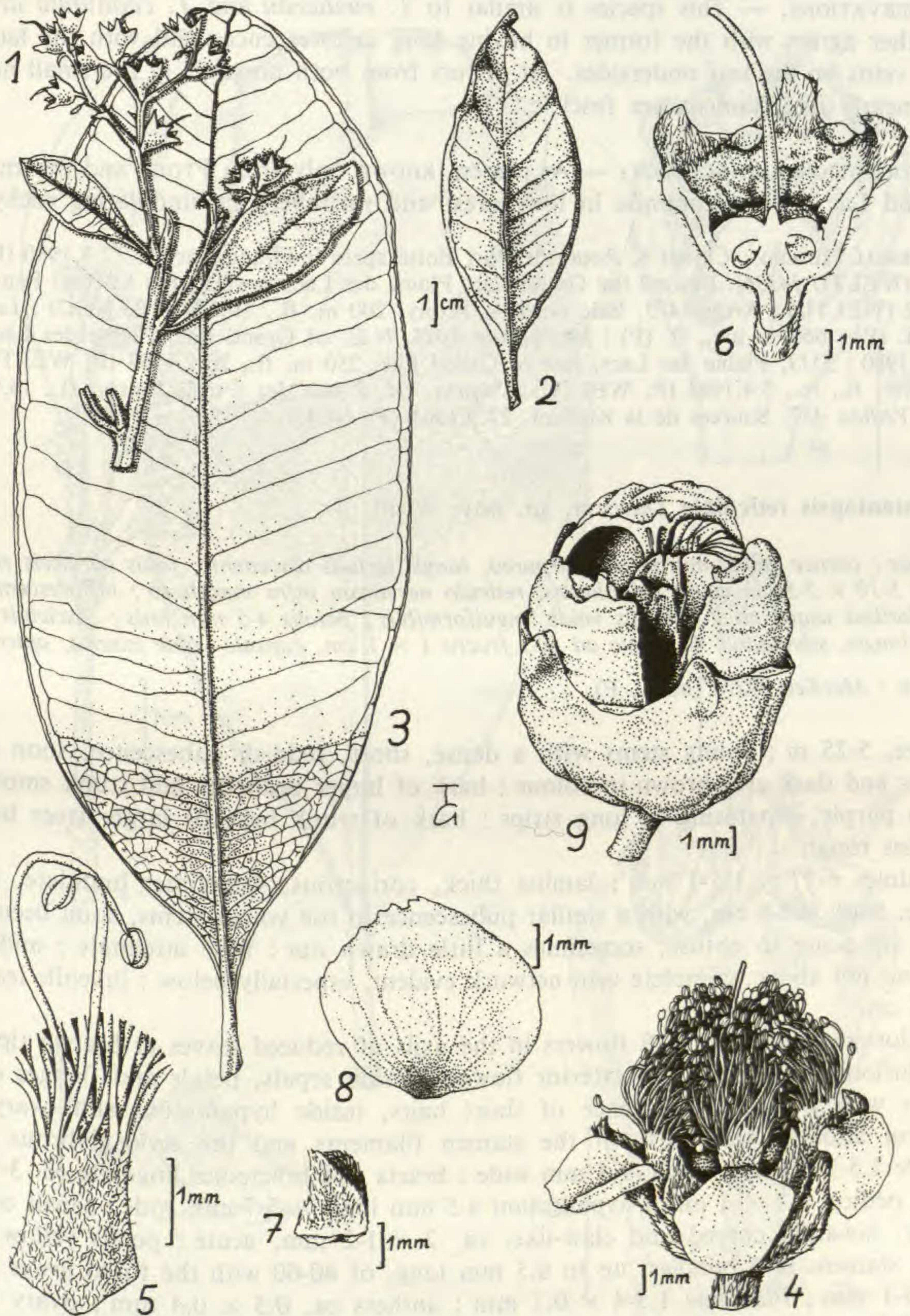
TYPE : *McPherson 3015* (holo-, P).

Small tree, 4-6 m ; young stems with a dense, short, reddish pubescence, becoming glabrous and dark brown in colour ; bark of larger branches and trunk somewhat rough and fissured, grey to brown, separating in large flakes.

Petioles 6-10 × 1-2 mm ; lamina coriaceous, sometimes a little undulate, elliptic to obovate, 3.5-7 × 1.8-3.3 cm, with a similar pubescence to the stems when young, soon becoming glabrous ; tip acute to obtuse, sometimes a little drawn out ; base cuneate then narrowly attenuate ; midrib raised below but not above, veins perceptible above, obscure below.

Inflorescences 1-4 cm long, of up to 15 flowers in the axils of reduced leaves at the tips of ordinary branches or on clusters of shorter lateral branches ; all inflorescence and flower parts moderately to densely pubescent except the inner sides of the petals, the stamens and the style ; primary peduncle 0.5-2.5 cm long × 1-2 mm wide ; bracts and bracteoles linear 1.2 × 0.1-0.2 mm ; pedicel ca. 1 × 1 mm ; hypanthium 2-2.5 mm high × 2-2.8 mm wide ; sepals erect, 1-1.5 × 1-1.5 mm, acute ; petals yellow 1-1.5 × 1-1.5 mm, fimbriate ; stamens barely fused in 5 bundles of 3-5 up to 1 mm long ; filaments 0.1-1 mm long × 0.1 mm ; anthers ca. 0.2 × 0.2 mm ; ovary semi-inferior, ca. 1.2 mm high × 1.2 mm wide ; style ca. 1 × 0.2 mm ; placenta apical with 4-6 pendent ovules.

Fruit capsule exserted, up to 4 mm long × 4 mm wide, 3 locular ; fertile seed ca. 2.5 × 1 mm.



Pl. 3. — *Tristaniopsis reticulata* Dawson : 1, leaves and young infructescences ; 2, adult leaf, adaxial view ; 3, juvenile leaf, abaxial view ; 4, flower habit ; 5, base of stamen bundle ; 6, flower L.S., stamens removed ; 7, sepal ; 8, petal ; 9, dehisced fruit. (1, MacKee 39278 ; 2, 9, MacKee 38429 ; 3, MacKee 38333 ; 4-8, MacKee 39292).

OBSERVATIONS. — This species is similar to *T. vieillardii* and *T. capitulata* in leaf size and further agrees with the former in having long inflorescences and with the latter in its obscure veins on the leaf undersides. It differs from both however in the small number of free or nearly free stamens per fascicle.

DISTRIBUTION AND ECOLOGY. — At present known only from Prony and the environs of the Grand Lac. Quite common in low forest and shrubbery on undulating rocky terrain.

MATERIAL STUDIED : *Cayrol 6*, Route de Port Boisé après le Grand Lac, fl., 2.8.1980 (P, NOU) ; *Dawson (WELTU 14336)*, Beyond the Grand Lac, Plaine des Lacs towards the Kuébini Peninsula, fl., 4.11.1982 (WELTU) ; *Kribs 1473*, Baie nord — Prony, 200 m, fl., 10.1903 (P, NOU) ; *Le Rat 390*, Prony, fl. (P) ; *660*, s. loc., fl. (P) ; *McPherson 3015*, N.E. of Grand Lac, Plaine des Lacs, 300 m, fl., 31.8.1980 ; *5513*, Plaine des Lacs, east of Grand Lac, 250 m, fl., 20.2.1983 (P, WELTU) ; *5619*, Koué River, fl., fr., 3.4.1983 (P, WELTU) ; *Suprin 704*, Route des « trois bras », fl., 18.9.1980 (P, NOU) ; *Veillon 437*, Sources de la Kuébini, 22.9.1965 (P, NOU).

***Tristaniopsis reticulata* Dawson, sp. nov. — Pl. 3.**

Arbor ; cortice laeve, murino ad purpureo, longis laciniis discedente, foliis coriaceis ellipticis vel obovatis 5-10 × 2-5 cm acutis vel obtusis, reticulo nervorum infra manifesto ; inflorescentiis 3-7 cm longis floribus usque ad 9 ; sepalis valde unguiformibus ; petalis 4-5 mm latis ; fasciculis staminum 5-7 mm longis, staminibus 40 usque ad 60 ; fructu 1 × 1 cm, capsula valde exserta, apice excavata.

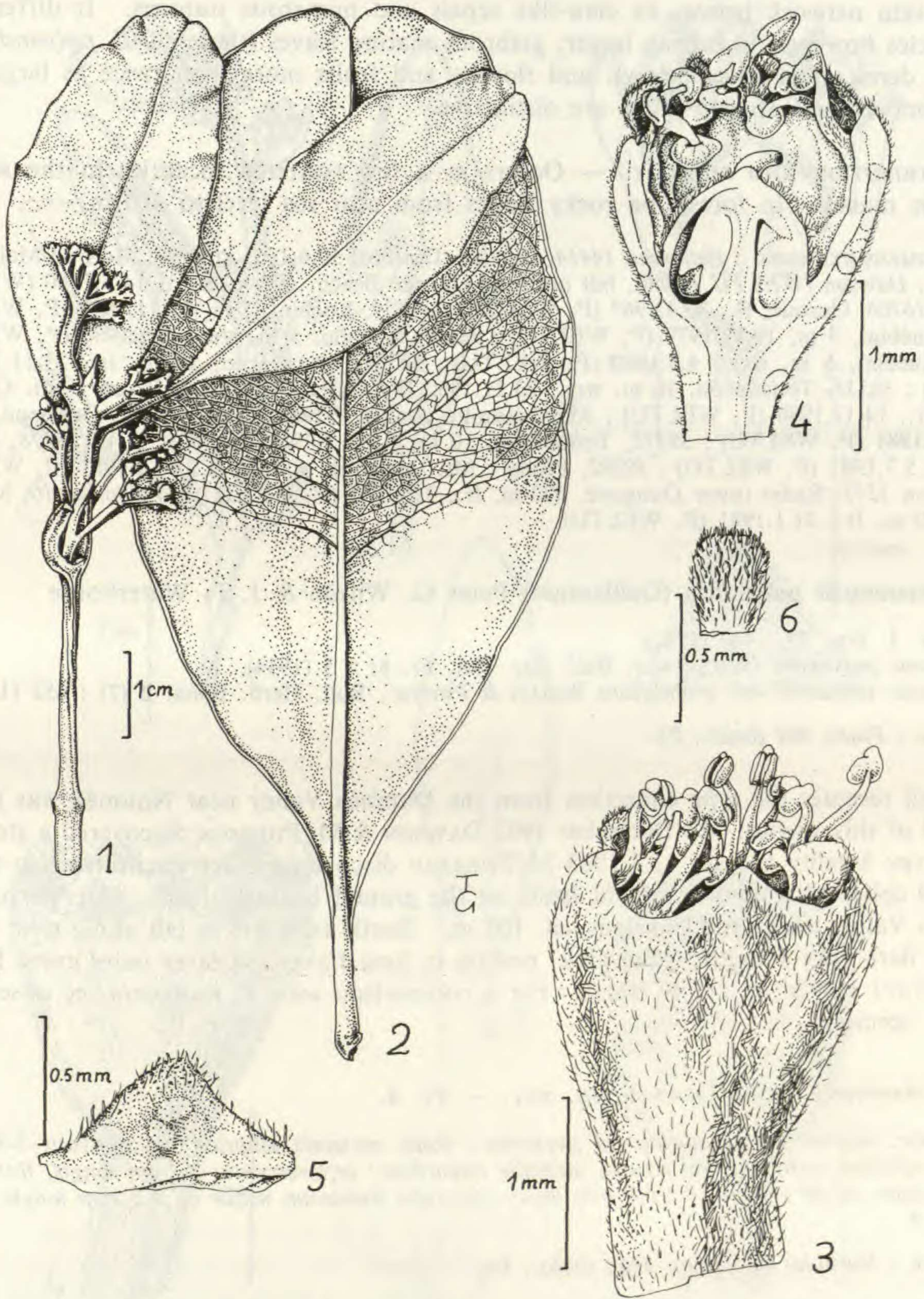
TYPE : *MacKee 39275* (holo-, P).

Tree, 5-25 m ; young stems with a dense, short, reddish pubescence, soon becoming glabrous and dark grey-brown in colour ; bark of larger branches and trunk smooth, grey-pink to purple, separating in long strips ; bark of trunk base of larger trees brown and somewhat rough.

Petioles 6-17 × 1.5-3 mm ; lamina thick, coriaceous, sometimes undulate, elliptic to obovate, 5-10 × 2-5 cm, with a similar pubescence to the young stems, soon becoming glabrous ; tip acute to obtuse, sometimes a little drawn out ; base attenuate ; midrib raised below but not above, complete vein network evident, especially below ; juvenile leaves up to 22 × 9 cm.

Inflorescences of up to 9 flowers in the axils of reduced leaves at branch tips, 3-7 cm long ; inflorescence axes, and exterior flowers, inside sepals, petals and flanges of stamen fascicles with a dense pubescence of short hairs, inside hypanthium and ovary sparsely pubescent and the free parts of the stamen filaments and the style glabrous ; primary peduncle 1.5-3 cm long × ca. 1.5 mm wide ; bracts and bracteoles lingulate ca. 3-3.5 × 1.5-2 mm ; pedicel 1-3 × 1 mm ; hypanthium 4-5 mm high × 5-7 mm wide ; sepals compressed laterally, inwardly curved and claw-like, ca. 2 × 1-2 mm, acute ; petals yellow 4-5 × 4-5 mm ; stamens in 5 bundles, up to 6.5 mm long, of 40-60 with the fused lower parts 1.5-3 × 0.5-1 mm ; filaments 1.5-4 × 0.1 mm ; anthers ca. 0.5 × 0.4 mm ; ovary half inferior, 2-2.5 mm high × 2.5-3 mm wide ; style 7-9 × 0.8-1 mm ; placenta apical with 10-13 pendent ovules.

Fruit capsule exserted, ca. 10 × 10 mm, hollowed at the apex, 3-locular ; fertile seed ca. 8 × 3 mm.



Pl. 4. — *Tristaniopsis lucida* Dawson : 1, leaves and inflorescences ; 2, leaf, abaxial view ; 3, flower habit ; 4, flower, L.S. ; 5, sepal ; 6, petal. (1, Morat 6609 ; 2-6, McPherson 2904).

OBSERVATIONS. — This species is similar to *Tristaniopsis polyandra* in its leaves with an evident vein network below, its claw-like sepals and numerous stamens. It differs from that species however, in having larger, glabrous mature leaves (those of *T. polyandra* have a short, dense pubescence below), and flowers and fruits more than twice as large. The large, almost barrel-shaped fruits are distinctive.

DISTRIBUTION AND ECOLOGY. — Occurs at a few scattered localities in the southern ultrabasic massif. In forests on rocky slopes from near sea level to 400 m.

SPECIMENS EXAMINED : *Baumann 14414*, Ouroué (Dothio), 30.6.1951 ; *14998*, Mois de Mai, 250 m, 4.8.1981 ; *Dawson (WELTU 13860)*, hill north of Ouroué Beach, 100 m, ster., 14.5.1980 (WELTU) ; *MacKee 16706*, Ouroué, fl., 30.4.1967 (P, WELTU) ; *37639*, Kuébini, 5 m, 26.11.1979 (P, WELTU) ; *37688*, Kuébini, 5 m, 19.12.1979 (P, WELTU) ; *38084*, Kuébini, 5 m, ster., 4.5.1980 (P, WELTU) ; *38085*, Kuébini, 5 m, ster., 4.5.1980 (P, WELTU) ; *38332*, Touaourou, 10 m, fr., 23.11.1980 (P, WELTU) ; *38333*, Touaourou, 10 m, ster., 23.11.1980 (P, WELTU) ; *38429*, Prony : Mt. Oungoné, 400 m, fr., 14.12.1980 (P, WELTU) ; *38692* (récolté par *M. Boulet*), Prony : Mt. Oungoné, 400 m, fr., 21.1.1981 (P, WELTU) ; *39275*, Touaourou, 10 m, fl., 5.7.1981 (P, WELTU) ; *39278*, Kuébini, 5 m, fl., 5.7.1981 (P, WELTU) ; *39292*, Prony : Mt. Oungoné, 400 m, fl., 10.7.1981 (P, WELTU) ; *McPherson 3571*, Radio tower Oungoné, 300 m, fr., 3.2.1981 (P, WELTU) ; *Veillon 4410*, Mt. Oungoné, 450 m, fr., 21.1.1981 (P, WELTU).

***Tristaniopsis polyandra* (Guillaumin) Peter G. Wilson & J. T. Waterhouse**

Aust. J. Bot. 30 : 440 (1982).

— *Tristania polyandra* GUILLAUMIN, Bull. Soc. Bot. Fr. 81 : 5 (1934).

— *Tristania vieillardii* var. *grandiflora* BONATI & PETITM., Bull. Herb. Boiss. 2 (7) : 652 (1907).

TYPE : *Franc 494* (holo-, P).

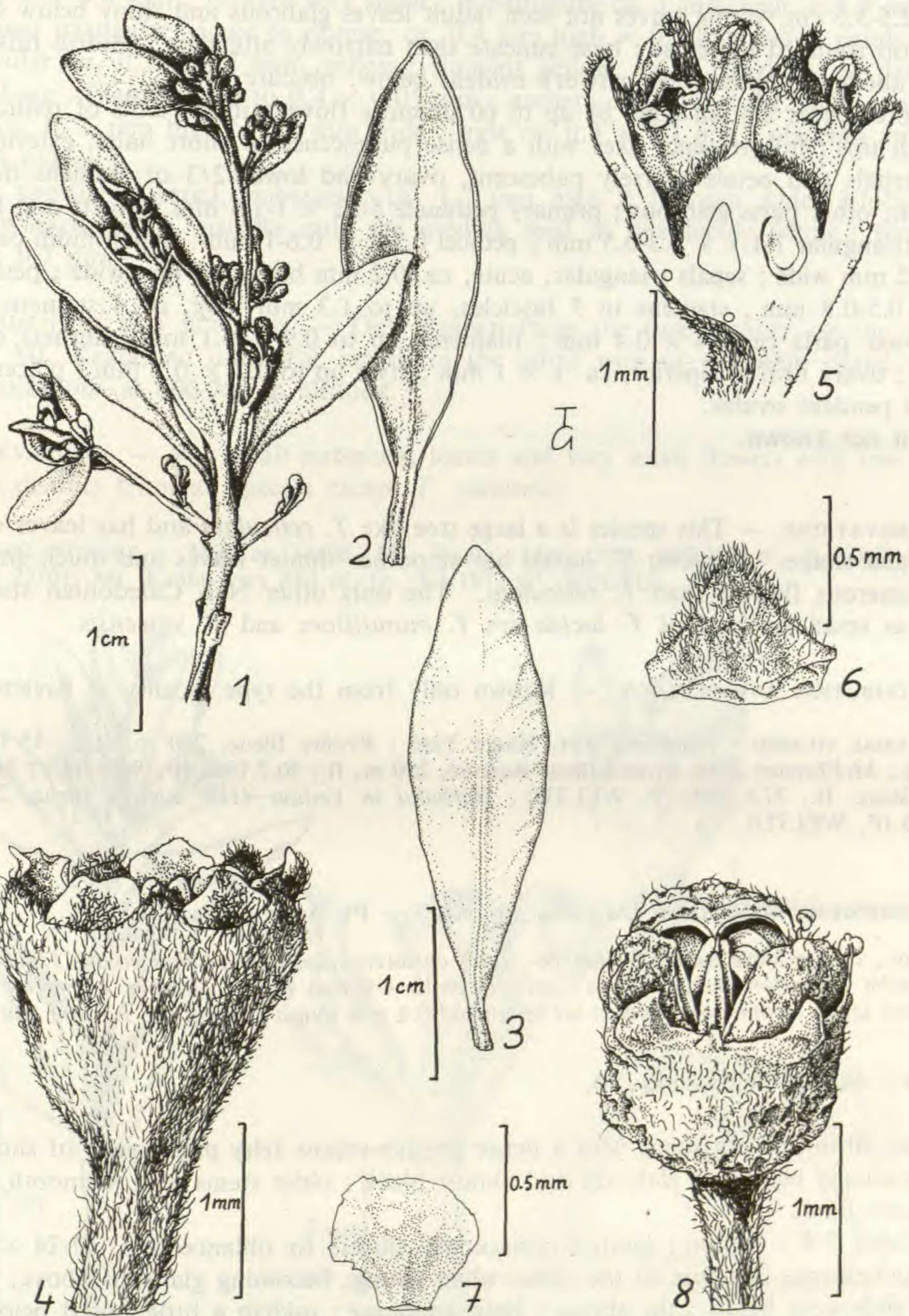
Until recently the type collection from the Dumbéa Valley near Nouméa was the only material of this species. In December 1982 DAWSON & MCPHERSON discovered a sterile tree at the type locality and on 13.2.1983 MCPHERSON discovered other sterile trees in the vicinity and collected a number of old fruits on the ground beneath them. (*McPherson 5510*, Dumbéa Valley, along road to dam, ca. 100 m. Sterile trees 4-8 m tall along river and dry creek. Bark very smooth, white-pink, peeling in long flakes. Leaves paler green beneath. Fallen fruits picked up below trees). For a comparison with *T. reticulata* see observations on that species.

***Tristaniopsis lucida* Dawson, sp. nov. — Pl. 4.**

Arbor ; cortice laeve, murino ad purpureo ; foliis coriaceis ellipticis vel obovatis 5-10 × 2.5-5.5 cm, apicibus rotundatis vel retusis, utrinque nitentibus ; inflorescentiis 2-3 cm longis, floribus perpusillis usque ad 60 ; petalis 0.5-0.8 mm latis ; fasciculis staminum usque ad 1.3 mm longis, staminibus ca. 4.

TYPE : *Harbulot in Veillon 4348* (holo-, P).

Tree, 12-25 m ; young stems with a dense, short, reddish pubescence, soon becoming glabrous and dark brown in colour ; bark of larger branches and trunk smooth, violet, pink-grey or brown.



Pl. 5. — *Tristaniopsis minutiflora* Dawson : 1, leaves and inflorescences ; 2, leaf, abaxial view ; 3, leaf, adaxial view ; 4, flower habit ; 5, flower, L.S. ; 6, sepal ; 7, petal ; 8, dehisced fruit. (1-7, MacKee 24608 ; 8, MacKee 25101).

Petioles 15-22 × 2-3 mm ; lamina coriaceous, sometimes undulate, elliptic to obovate, 5-10 × 2.5-5.5 cm, young leaves not seen, adult leaves glabrous and shiny below as well as above ; tip rounded to retuse ; base cuneate then narrowly attenuate ; midrib raised below but not above, complete vein network evident below, obscure above.

Inflorescences 2-3 cm long, of up to 60 or more flowers in the axils of reduced leaves at branch tips ; inflorescence axes with a dense pubescence of short hairs, exterior hypanthium, sepals and petals sparsely pubescent, ovary and lower 2/3 of stamens moderately pubescent, other parts glabrous ; primary peduncle 5-12 × 1-1.5 mm ; bracts and bracteoles narrow triangular 1-1.1 × 0.3-0.5 mm ; pedicel 0.7-1 × 0.6-1 mm ; hypanthium ca. 1.5 mm high × 2 mm wide ; sepals triangular, acute, ca. 0.2 mm high × 1 mm wide ; petals yellow 0.7-1 × 0.5-0.8 mm ; stamens in 5 fascicles, up to 1.3 mm long, of 4 stamens with the fused lower parts ca. 0.4 × 0.4 mm ; filaments up to 0.9 × 0.1 mm ; anthers ca. 0.2 × 0.1 mm ; ovary nearly superior, ca. 1 × 1 mm ; style up to 0.7 × 0.2 mm ; placenta apical with 4-6 pendent ovules.

Fruit not known.

OBSERVATIONS. — This species is a large tree like *T. reticulata* and has leaves of a similar size and shape. However *T. lucida* has smoother shinier leaves and much smaller and more numerous flowers than *T. reticulata*. The only other New Caledonian species with flowers as small as those of *T. lucida* are *T. minutiflora* and *T. yateensis*.

DISTRIBUTION AND ECOLOGY. — Known only from the type locality at Rivière Bleue.

MATERIAL STUDIED : *MacKee 37444*, Haute Yaté : Rivière Bleue, 200 m, ster., 15.10.1979 (P, WELTU) ; *McPherson 2904*, Rivière Bleue Reserve, 250 m, fl., 30.7.1980 (P, WELTU) ; *Morat 6609*, Rivière Bleue, fl., 27.8.1980 (P, WELTU) ; *Harbulot in Veillon 4348*, Rivière Bleue, 250 m, fl., 13.8.1980 (P, WELTU).

***Tristaniopsis minutiflora* Dawson, sp. nov. — Pl. 5.**

Arbor ; cortice laeve pallide ferrugineo ; foliis coriaceis ellipticis vel oblanceolatis 17-24 × 7-9 mm obtusis infra confertim pubescentibus ; inflorescentiis 4-9 mm longis, floribus usque ad 9 ; petalis ca. 0.5 mm latis ; staminibus solitariis vel binatis ad 0.4 mm longis ; fructu ca. 1.7 mm alta et 1.4 mm lata.

TYPE : *MacKee 24608* (holo-, P).

Tree, 10 m ; young stems with a dense greyish-yellow felty pubescence of short twisted hairs, gradually becoming glabrous and almost black ; older stems with a smooth, pale reddish brown bark.

Petioles 3-4 × 1 mm ; lamina coriaceous, elliptic to oblanceolate, 17-24 × 7-9 mm, with a pubescence like that of the stems when young, becoming glabrous above, remaining densely pubescent below ; tip obtuse ; base attenuate ; midrib a little raised below.

Inflorescences 4-9 mm long of up to 9 flowers in the axils of reduced leaves on clusters of short branchlets ; all inflorescence and flower parts densely pubescent, except the inner surfaces of the petals, the lower part of the inner hypanthium and the stamens and style ;

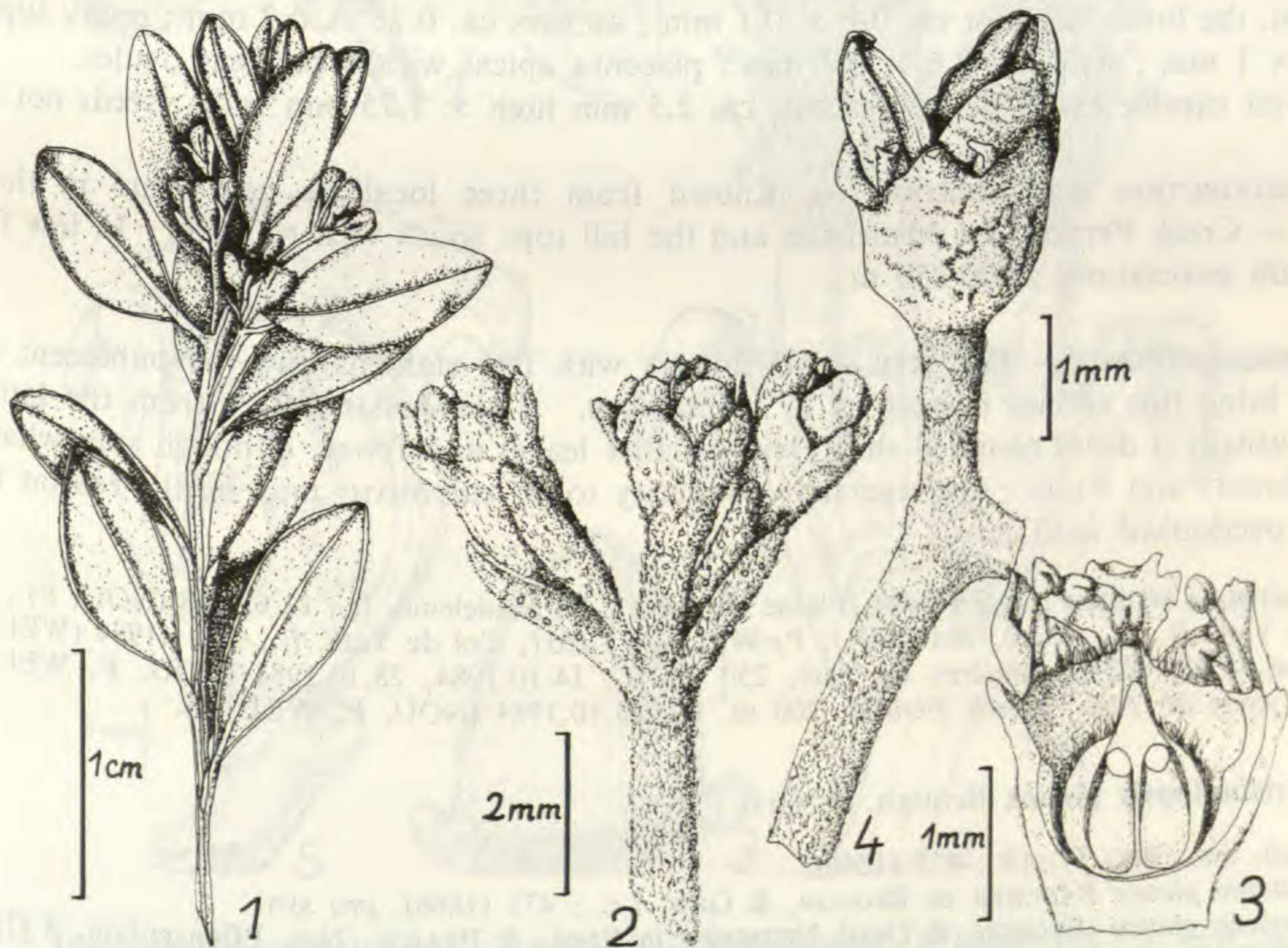
primary peduncle $< 3 \times 0.7$ mm ; bracts and bracteoles linear $0.5-1 \times 0.15-0.25$ mm ; pedicels $1-3 \times 0.6$ mm ; flowers very small ; hypanthium ca. 1 mm high \times 1.5 mm wide ; sepals broad triangular, acute to obtuse, ca. 0.4 mm high \times 0.7 mm wide ; petals more or less orbicular ca. 0.5×0.5 mm, yellow ; stamens yellow, ca. 7, single or in pairs fused near the base ; filaments up to 0.4×0.05 mm ; anthers ca. 0.15×0.15 mm ; ovary half superior ca. 0.75 mm high \times 0.8 mm wide ; style ca. 0.4×0.1 mm ; placenta apical with 3 pendent ovules.

Fruit capsule exserted, pubescent, ca. 1.7 mm high \times 1.4 mm wide, 3-locular with 3 seeds in each locule, usually only the median seed in one locule fertile ; fertile seed ca. 1.6×0.7 mm.

DISTRIBUTION AND ECOLOGY. — Only known from the type locality on the southern slopes of Mt. Kaala, an ultrabasic massif in the north west of the main island. In tall shrub associations at 600-700 m altitude.

OBSERVATIONS. — The small pubescent leaves and very small flowers with few stamens make this distinct from all species except *T. yateensis*.

MATERIAL STUDIED : *MacKee 24608*, Mt. Kaala, pente Sud, 600-700 m, fl., 6.11.1979 (P, WELTU) ; *25101*, Mt. Kaala, vers 650 m, fr., 3.3.1972 (P, WELTU).



Pl. 6. — *Tristaniopsis yateensis* Dawson : 1, leaves and inflorescences ; 2, inflorescence ; 3, flower, L.S. ; 4, dehiscent fruit. (1-3, *MacKee 42333* ; 4, *Jaffré 2604*).

Tristaniopsis yateensis Dawson, *sp. nov.* — Pl. 6.

Frutex vel arbor parva; foliis coriaceis ellipticis vel obovatis 9-13 × 3.5-5.5 mm, apicibus rotundatis, infra confertim pubescentibus; inflorescentiis 7-10 mm longis, floribus usque ad 3; petalis ca. 1 mm latis; staminibus binatis ad 0.6 mm longis; fructu ca. 2.5 mm alto et 1.75 mm lato.

TYPUS : MacKee 42352 (holo-, P).

Shrub, 2-3 m, dense and rounded, sometimes a small tree up to 6 m; young stems with a dense, short, greyish pubescence, long persistent; older stems with pale brown fibrous bark separating in irregular strips. Petioles 1.5-3 × 1 mm; lamina coriaceous, elliptic to obovate, 9-13 × 3.5-5.5 mm, with a pubescence like that of the stems when young, becoming glabrous and shining above, remaining densely pubescent below; tip rounded; base attenuate; midrib raised below.

Inflorescences 7-10 mm long, mostly 2-3-flowered in the axils of unreduced leaves; all inflorescence and flower parts moderately pubescent, except the inner surfaces of the petals, the inner hypanthium and the stamens and style; peduncle up to 5 × 1 mm; bracts and bracteoles linear 1-2.5 × 0.5-0.75 mm; pedicels 1-2 × 0.7 mm; flowers small; hypanthium 1-2 mm high × 1-1.5 mm wide; sepals triangular, acute, 0.5-0.75 high × 1 mm wide; petals more or less orbicular, 0.6-0.8 mm high × 0.8-1 mm wide, yellow; stamens yellow, 10, free or slightly fused in pairs; the upper filament of each pair ca. 0.6 × 0.1 mm, the lower filament ca. 0.2 × 0.1 mm; anthers ca. 0.25 × 0.2 mm; ovary superior ca. 1 × 1 mm; style ca. 0.6 × 0.2 mm; placenta apical with 3 pendent ovules.

Fruit capsule exserted, glabrescent, ca. 2.5 mm high × 1.75 mm wide; seeds not seen.

DISTRIBUTION AND ECOLOGY. — Known from three localities near Yaté in the far south — Creek Pernod, La Madeleine and the hill tops south west of Yaté. In low forest or shrub associations; 200-250 m.

OBSERVATIONS. — The very small flowers with few stamens and the pubescent adult leaves bring this species nearest to *T. minutiflora*. *T. yateensis* differs from the latter in being usually a dense rounded shrub with smaller leaves and fewer, although somewhat larger, flowers and fruits. Its vegetative similarity to *T. calobuxus* may be the reason for it being overlooked until now.

MATERIAL STUDIED : Jaffré 2484, Plaine des Lacs : La Madeleine, fr., 12.6.1978 (NOU, P); 2604, Col de Yaté, fl., fr., 20.10.1984 (NOU, P, WELTU); 2631, Col de Yaté, fl., 21.11.1984 (WELTU); MacKee 42333, 42346, hauteurs de Yaté, 250 m, fl., 14.10.1984, 28.10.1984 (NOU, P, WELTU); 42352, route de Yaté : Creek Pernod, 200 m, fl., 28.10.1984 (NOU, P, WELTU).

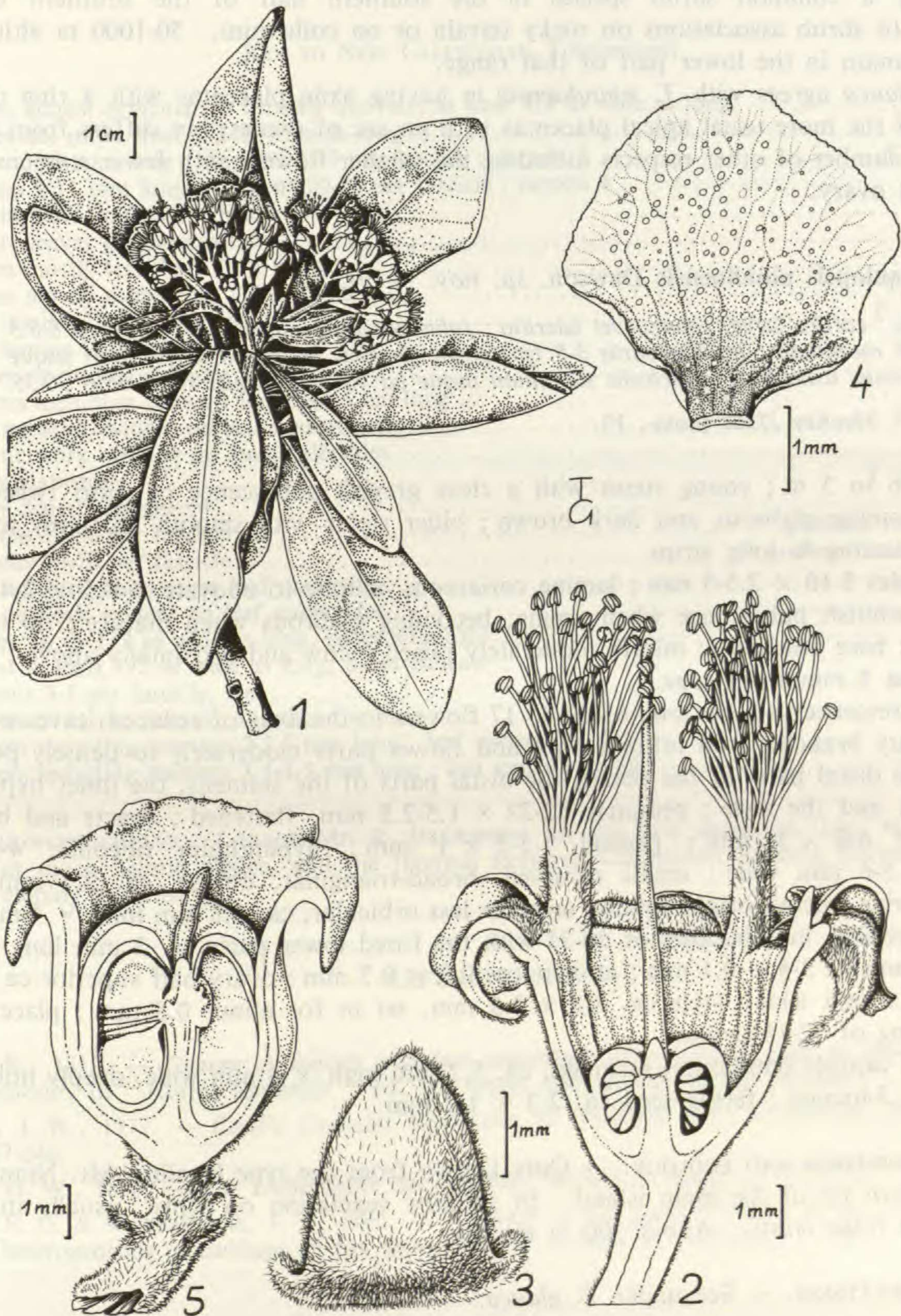
Tristaniopsis glauca Brongn. & Gris

Bull. Soc. Bot. Fr. 13 : 471 (1866).

— *Tristania glauca* PANCHER ex BRONGN. & GRIS, *l.c.* : 471 (1866), *pro syn.*

— *Tristania glauca* (BRONGN. & GRIS) NIEDENZU in ENGL. & PRANTL, Nat. Pflanzenfam. 3 (7) : 89 (1893).

TYPE : Pancher s.n. (lecto-, P).



Pl. 7. — *Tristaniopsis ninndoensis* Dawson : 1, leaves and inflorescences ; 2, flower, L.S. ; 3, sepal ; 4, petal ; 5, young fruit, L.S. (All WELTU 12715).

Quite a common shrub species in the southern half of the southern ultrabasic massif. In shrub associations on rocky terrain or on colluvium. 50-1000 m altitude, but most common in the lower part of that range.

T. glauca agrees with *T. ninndoensis* in having axile placentas with a ring of ovules instead of the more usual apical placentas with an arc of ovules, but differs from that species in a number of other respects including the smaller flowers with fewer stamens and the pubescent ovary.

***Tristaniopsis ninndoensis* Dawson, sp. nov. — Pl. 7.**

Frutex; cortice laeve, cinereo vel lateritio; foliis coriaceis ellipticis vel obovatis 6-8.5 × 2-4 cm obtusis vel rotundatis; inflorescentiis 3-5 cm longis, floribus usque ad 17; petalis usque ad 4 mm latis; placentis axillaribus; fasciculis staminum usque ad 10 mm longis, staminibus 30-35.

TYPE : MacKee 25588 (holo-, P).

Shrub to 3 m; young stems with a close greyish pubescence of short twisted hairs, soon becoming glabrous and dark brown; older stems with smooth pale-grey to reddish bark separating in long strips.

Petioles 5-10 × 2.5-3 mm; lamina coriaceous, elliptic to obovate, 6-8.5 × 2-4 cm with a dense whitish pubescence when young, becoming glabrous when mature; tip obtuse to rounded; base attenuate; midrib moderately raised below and proximally above; marginal vein about 1 mm from edge.

Inflorescences 3-5 cm long of up to 17 flowers in the axils of reduced leaves at the tips of ordinary branches; all inflorescence and flower parts moderately to densely pubescent, except the distal parts of the petals, the distal parts of the stamens, the inner hypanthium, the ovary and the style; peduncle 12-22 × 1.5-2.5 mm, flattened; bracts and bracteoles lanceolate 6-8 × 3 mm; pedicel 1.5-5 × 1 mm; hypanthium obconic, 4-5.5 mm high × 4.5-6 mm wide; sepals recurved, broad-triangular, obtuse, ca. 2.7 mm long × 2.2 mm wide; petals bright yellow, more or less orbicular, ca. 3.8 mm long × 4 mm wide; stamens yellow, in 5 bundles of 30-35 with the fused lower parts ca. 2 mm long × 1 mm wide; filaments 3-8 × 0.1 mm; anthers ca. 0.3 × 0.2 mm; ovary half superior ca. 2.2 mm high × 2.8 mm wide; style ca. 8.3 × 0.5 mm, set in for about 0.5 mm; placenta axile with a ring of 12-15 ovules.

Fruit capsule (immature) included, ca. 5.2 mm high × 4 mm wide, deeply hollowed at the apex, 3-locular; fertile seed ca. 2.3 × 1.2 mm.

DISTRIBUTION AND ECOLOGY. — Only known from the type locality, Mt. Ninndo, near the northern tip of the main island. In shrubby vegetation on schist, usually in hollows below the ridge crests. About 300 m altitude.

OBSERVATIONS. — See under *T. glauca*.

MATERIAL STUDIED : Dawson (WELTU 12715), Col d'Arama, 300 m, fl., 14.12.1977 (WELTU); MacKee 25588, Arama — Mts. Ninndo, 300 m, fl., 22.6.1972 (P, WELTU).

KEY TO NEW CALEDONIAN *Tristaniopsis*

1. Leaves almost orbicular to broadly obovate, at least 3/4 as wide as long 2
 Leaves not more than 2/3 as wide as long 3
2. Flowers 5-6 mm long ; stamens 8-12 per fascicle ; carpels 3 *T. calobuxus*
 Flowers 9-11 mm long ; stamens 20-26 per fascicle ; carpels 4 *T. jaffrei*
3. Mature leaves pubescent below 4
 Mature leaves glabrous below 6
4. Leaves mostly less than 1 cm wide 5
 Leaves mostly more than 1.5 cm wide *T. polyandra*
5. Leaf lamina 17-24 mm long *T. minutiflora*
 Leaf lamina 9-13 mm long *T. yateensis*
6. Flowers including stamens 1-2 cm long 7
 Flowers including stamens less than 1 cm long 10
7. Vein network evident on leaf undersides *T. reticulata*
 Vein network obscure on leaf undersides 8
8. Ovary glabrous *T. ninndoensis*
 Ovary densely pubescent 9
9. Stamens 15-30 per fascicle *T. guillainii* var. *guillainii*
 Stamens 50-70 per fascicle *T. guillainii* var. *balansana*
10. Vein network obscure on leaf undersides 11
 Vein network evident on leaf undersides 13
11. Leaves up to 1/3 as wide as long, bases attenuate *T. glauca*
 Leaves at least 1/2 as wide as long, bases cuneate 12
12. Stamens 3-5 per fascicle, free *T. macphersonii*
 Stamens 7-11 per fascicle, fused at the base *T. capitulata*
13. Flowers including stamens 2-2.5 mm long ; leaf undersides shiny *T. lucida*
 Flowers including stamens 3.5-4.5 mm long ; leaf undersides dull *T. vieillardii*

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